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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,638	09/12/2003	Katsuhisa Yamazaki	02910.000079.	7561

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FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER	
DOTE, JANIS L	

ART UNIT	PAPER NUMBER
1756	

DATE MAILED: 03/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/660,638	YAMAZAKI ET AL.	
	Examiner	Art Unit	
	Janis L. Dote	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-9,11-13 and 15-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-9,11-13 and 15-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 January 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/12/05;2/23/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicants' submission filed on Nov. 25, 2005, has been entered.

2. The examiner acknowledges the cancellation of claims 10 and 14 and the amendment to claim 1 set forth in the amendment filed on Nov. 25, 2005. Claims 1, 3-9, 11-13, and 15-17 are pending.

3. The objection to the specification under 35 U.S.C. 132 set forth in the office action mailed on Apr. 11, 2005, paragraph 4, has been withdrawn in response to the deletion of paragraphs 0055C and 0055D in the substitution specification set forth in the amendment filed on Nov. 25, 2005.

The rejections of claims 1 and 3-17 are rejected under 35 U.S.C. 112, first and second paragraphs, set forth in the office action mailed on Apr. 11, 2005, paragraphs 6 and 8, have been

withdrawn in response to the deletion of paragraphs 0055C and 0055D in the substitution specification set forth in the amendment filed on Nov. 25, 2005, and in response to the Rule 132 declaration, which was executed by Katsuhisa Yamazaki and Takashiga Kasuya on Feb. 9, 2006, filed on Feb. 23, 2006. The declaration provides sufficient evidence to show that the definitions of the rates of liberation recited in instant claim 1 are well known to persons having ordinary skill in the art at the time the subject application was filed, as shown in paragraphs 0109-0111 of US 2001/0028988 A1 (Magome).

4. Upon further review of the reference US 2001/0028988 A1 (Magome), the examiner's withdrawal of the rejections over Magome in the office action mailed on Apr. 11, 2005, was premature. The examiner regrets any inconvenience to applicants. Rejections over Magome are set forth infra.

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 3-5, 7-9, 11-13, and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 2001/0028988 A1

(Magome), as evidenced by applicants' admission at page 30, lines 6-9, of the originally filed specification (applicants' admission I).

Magome discloses a developer comprising 100 parts by weight of toner particles, 1.0 part by weight of hydrophobic silica particles, and 1.5 parts by weight of conductive zinc oxide particles. See paragraphs 0403-0409, and toner 25 in paragraphs 0484 and 0485 and in Table 3 in paragraph 0632. The liberation percentage, i.e., rate of liberation, of the hydrophobic silica particles is 1.56%. The liberation percentage, i.e., rate of liberation, of the conductive zinc oxide particles is 38.5%. The liberation rate, i.e., the rate of liberation, is defined as a percentage of the number of light emissions of "only metal" atoms associated with the silica or the conductive powder, determined by the particle analyzer PT1000 with respect to the sum of the number of light emissions of the metal atoms "having emitted light simultaneously with carbon atoms" associated with the toner particles determined by the particle analyzer PT1000 and the number of light emissions of "only metal" atoms. See paragraphs 0249 and 0254. The liberation percentage of the hydrophobic silica particles is within the ranges of 0.8 to 1.90% recited in instant claim 1.

The liberation percentage of the conductive zinc oxide particles of 38.5% is not within the range of 40 to 95% recited in instant claim 1. However, Magome teaches that the rate of liberation of the conductive particles can range from 5.0 to 50%. Paragraph 0253, lines 4-6. According to Magome, when the liberation percentage is less than 5.0%, the presence of the conductive particles liberated from the magnetic toner particles is not effective to make the magnetic toner particles more uniformly chargeable. Magome teaches that when the rate of liberation is more than 50%, the conductive powder "may less uniformly adhere to the magnetic toner particles, undesirably." Paragraph 0253, lines 6-18, and paragraph 0262. The upper value, 50%, of the Magome liberation percentage of 5.0 to 50% is within the conductive particle rate of liberation range of 40 to 95% recited in instant claim 1. Thus, Magome teaches a toner having a conductive particle rate of liberation within the scope of instant claim 1.

The toner particles comprise a binder resin and magnetic iron oxide particles as the colorant. The toner particles have a weight average particle diameter of 7.3 μm. The toner particles meet the toner particle compositional limitations recited in instant claim 1 and the particle size limitation recited in instant claim 16. The hydrophobic silica particles

have a number average particle diameter (Db) of 9 nm, and were treated first with hexamethyldisilazane and then with a silicone oil. Paragraph 0409. The hydrophobic silica particles and the amount of hydrophobic silica particles in magnetic toner 25 meet the inorganic fine particle limitations recited in instant claims 1, 11-13, and 15. The conductive zinc oxide particles are agglomerates of zinc oxide particles, where the agglomerates have a volume average particle diameter (Da) of 2.6 μm. The conductive zinc oxide particles have a resistivity of 1,500 Ω·cm. Paragraph 0396. The conductive zinc oxide particles meet the conductive particles compositional limitations recited in instant claim 1, and the amount limitation and physical limitations recited in instant claims 5 and 7-9. The conductive particles volume average particle diameter Da of 2.6 μm (i.e., 2,600 nm) and the hydrophobic silica particles number average particle diameter Db of 9 nm satisfy the relationship $Da \geq 10Db$ recited in instant claim 1.

Magome does not disclose that its developer has the wettability as recited in instant claims 1, 3, and 4. However, the originally filed specification at page 30, lines 6-9, discloses that the wettability of the developer is "largely affected by an attachment condition of the inorganic fine particle on the surface of toner particle." As discussed supra,

Magome discloses a developer comprising hydrophobic silica particles that meet the inorganic fine particle compositional and physical limitations recited in instant claim 1, from which claims 3 and 4 depend. The Magome developer also exhibits a rate of liberation of the hydrophobic silica particles that is within the inorganic fine particle rate of liberation range recited in instant claim 1. Thus, it is reasonable to presume that the developer disclosed by Magome has the wettability as recited in instant claims 1, 3, and 4. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Instant claim 17 is written in product-by-process format. Magome does not exemplify making a developer "by adding the inorganic fine particle to the toner particle and then adding the conductive fine particle thereto" as recited in instant claim 17. Rather, Magome discloses mixing both the hydrophobic silica and conductive zinc oxide with the toner particles in a HENSCHEL MIXER. Paragraphs 0409 and 0485. However, as discussed above, the toner taught by Magome meets the toner compositional and physical limitations recited in the instant claims. Accordingly, the Magome toner appears to be the same or substantially the same as the developer made by the method recited in the instant claims. The burden is on applicants to

prove otherwise. In re Marosi, 218 USPQ 289 (Fed. Cir. 1983); In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985); MPEP 2113.

7. In the alternative, claims 1, 3-5, 7-9, 11-13, and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magome, as evidenced by applicants' admission I.

Magome, as evidenced by applicants' admission I. discloses a developer as described in paragraph 6 above, which is incorporated herein by reference.

For the reasons discussed in paragraph 6 above, it is reasonable to presume that the developer disclosed by Magome has the wettability as recited in instant claims 1, 3, and 4. The burden is on applicants to prove otherwise. Fitzgerald, supra.

As discussed in paragraph 6 above, in the Magome magnetic toner 25, the liberation percentage of the conductive zinc oxide particles of 38.5% is not within the range of 40 to 95% recited in instant claim 1. However, Magome teaches that the rate of liberation of the conductive particles can range from 5.0 to 50%. Paragraph 0253, lines 4-6. The upper value, 50%, of the Magome liberation percentage of 5.0 to 50% is within the conductive particle rate of liberation range of 40 to 95% recited in instant claim 1. The Magome range of 5.0 to 50% overlaps the range of 40 to 95% recited in instant claim 1.

According to Magome, when the magnetic toner comprises conductive particles liberated from the magnetic toner in the liberation percentage of 5.0 to 50%, the magnetic toner has remarkably improved developing performance and "can attain high image density." Magome teaches that when the liberation percentage is less than 5.0%, the presence of the conductive particles liberated from the magnetic toner particles is not effective to make the magnetic toner particles more uniformly chargeable. Magome further teaches that when the rate of liberation is more than 50%, the conductive powder "may less uniformly adhere to the magnetic toner particles, undesirably." Paragraph 0253, lines 6-18, and paragraph 0262. Thus, the prior art appears to recognize that the liberation percentage of the conductive particles is a result-effective variable. The variation of a result-effective variable is presumably within the skill of the ordinary worker in the art.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Magome, to adjust, through routine experimentation, the liberation percentage of the conductive particles in the Magome magnetic toner 25, such that the liberation percentage is within the range of 40 to 95% recited in instant claim 1. That person would have had a reasonable expectation of successfully obtaining a developer

comprising a magnetic toner that has remarkably improved developing performance and that "can attain high image density."

Instant claim 17 is written in product-by-process format. Magome does not exemplify making a developer "by adding the inorganic fine particle to the toner particle and then adding the conductive fine particle thereto" as recited in instant claim 17. Rather, Magome discloses mixing both the hydrophobic silica and conductive zinc oxide with the toner particles in a HENSCHEL MIXER. Paragraphs 0409 and 0485. However, as discussed above, the magnetic toner rendered obvious over the teachings of Magome meets the toner compositional and physical limitations recited in the instant claims. Accordingly, the toner rendered obvious over the teachings of Magome appears to be the same or substantially the same as the developer made by the method recited in the instant claims. The burden is on applicants to prove otherwise. Marosi, supra; Thorpe, supra; MPEP 2113.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Magome, as evidenced by applicants' admission I, combined with US 5,370,957 (Nishikiori) and US 6,709,798 B2 (Tamaoki).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Magome, as evidenced by applicants' admission I, as applied to claim 1 above, combined with Nishikiori and Tamaoki.

Magome, as evidenced by applicants' admission I, discloses a developer as described in paragraph 6 above, which is incorporated herein by reference.

Magome, as evidenced by applicants' admission I, renders obvious a developer as described in paragraph 7 above, which is incorporated herein by reference.

As discussed in paragraphs 6 and 7 above, the Magome toner 25 comprises conductive zinc oxide powder. However, Magome does not disclose that the conductive zinc oxide powder is subjected to a hydrophobic treatment as recited in instant claim 6.

Nishikiori discloses that "for optimizing an optimal image quality, a treatment for improving the frictional charging property, such as a treatment of increasing or decreasing the conductivity and a hydrophobic treatment may be applied to the surface of the conductive particles" (emphasis added) used as surface additives in toners. Col. 6, lines 44-49. Tamaoki discloses that "[f]rom the perspective of heat resistance storage characteristics and environmental stability, it is

desirable that inorganic particles, and particularly . . . zinc oxide [post-processing agents added to facilitated fluidity and cleaning of the toner] and the like, are subjected to surface processing by known methods using processing agents such as hydrophobic processing agent[s] such as silane coupling agent . . . silicon [sic] oil, silicon [sic] wax . . . modified silicon [sic] oil and the like." Col. 9, lines 35-37 and 47; and col. 9, line 64, to col. 10, line 7.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Nishikiori and Tamaoki, to hydrophobically treat the conductive zinc oxide powder as recited in instant claim 6 in the magnetic toner disclosed by Magome or the magnetic toner rendered obvious over the teachings of Magome. That person would have had a reasonable expectation of successfully obtaining a developer comprising a magnetic toner that has improved heat resistance storage characteristics, environmental stability, and frictional charging characteristics, and that provides images with optimal image quality.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Mr. Nam Nguyen, can be reached on (571) 272-1342. The central fax phone number is (571) 273-8300.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD
Mar. 12, 2006

Janis L. Dote
JANIS L. DOTE
PRIMARY EXAMINER
GROUP ~~1500~~ 1700